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On vector formulations of auction-type problems with applications

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Abstract

© 2014 Taylor & Francis.We propose an extension of the auction model with many divisible commodities for vector price (validity) functions. It can be viewed as a new general equilibrium model for complex systems with active elements. We give its sufficient vector variational inequality formulation and new general existence results for different ordering cones. We suggest vector extensions of network and spatial equilibrium problems with capacity bounds and show that they are particular cases of the general auction model. We also give new sufficient conditions for existence of solutions for these problems.

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Keywords

Auction model, Existence of solutions, Vector network equilibria, Vector price functions, Vector spatial price equilibria, Vector variational inequalities